Eclipse® Thermal Imager User Manual

Congratulations

Congratulations on the purchase of your new Bullard Eclipse Thermal Imager.

The Eclipse represents a milestone in handheld firefighting thermal imaging, offering breakthroughs in portability, ease-of-use, and affordability to create the market's first truly personal-issue thermal imager. Designed with high-heat, impact-resistant engineered polymers and infused with the latest thermal imaging technology, the Eclipse is a powerful firefighting tool.

The benefits of using thermal imaging technology as a firefighting tool encompass nearly every aspect of a firefighter's job. Thermal imaging is not, however, a technology designed to replace current firefighting tactics. Rather, it is a tool that allows the firefighter to be more effective and make better decisions. Some of the many uses for your Bullard Eclipse Thermal Imager include:

- Search and rescue
- Scene assessment
- Locating the seat of the fire
- Determining the spread of the fire
- Locating hot spots
- Identifying potential flashover situations
- Determining ventilation points
- Determining entry and exit points
- Overhaul
- Hazmat
- Wildland firefighting
- Incident investigation
- Training

⚠ WARNING

Read all instructions and warnings before using this product.

Your thermal imager is like any other tool. It must be used properly and safely. All users should be trained on the proper and safe use of thermal imaging prior to using the Eclipse Thermal Imager. This is especially important for users who may use the Eclipse Thermal Imager in hazardous or IDLH (immediately dangerous to life and health) environments.

Failure to follow this information could result in death or serious injury.

Getting Started

Registering Your Eclipse

Before using your Eclipse Thermal Imager for the first time, it is necessary for you to register the product with Bullard. Registration accomplishes several important tasks. First, registration assures that you will always stay informed of the latest product updates, service and training issues related to the Eclipse Thermal Imager. Second, registration will reduce the startup time of your imager from 30 seconds to less than four seconds. Third, registration activates a security feature on the Eclipse that saves your user information to the imager itself. With this feature activated, should your Eclipse ever become lost or stolen, simply provide Bullard with a copy of a police report, and we can flag that serial number. If the imager is ever returned to Bullard for service or upgrade, you will be notified.

NOTE

Do not connect your Eclipse Thermal Imager to your computer until prompted to do so during installation of the Eclipse Control Panel software. Failure to observe this practice may result in the installation of defective USB drivers.

Installing the Software

If you turn on your Eclipse prior to registration, you will see a screen advising you of the need to register your Eclipse. This screen will be displayed for 30 seconds, after which, the Eclipse will function normally. After registration; however, the advisory screen will disappear and the Eclipse will power up to normal operation in less than four seconds.

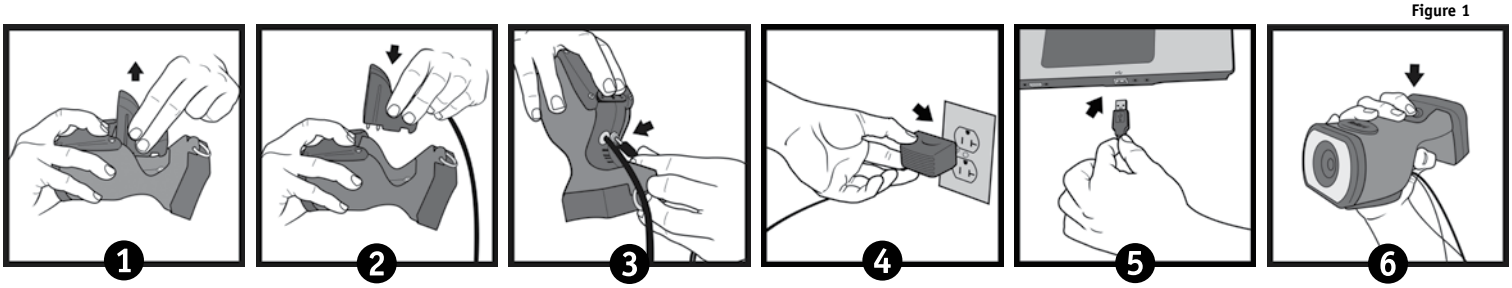
Registration is accomplished by installing the Eclipse Control Panel software onto your computer and then connecting your Eclipse Thermal Imager via the enclosed data cable, when prompted during the installation process. Once this is done, simply follow the on-screen instructions.

Connecting Your Eclipse

After installing the Eclipse Control Panel software, you will need to connect your Eclipse Thermal Imager to your computer. In order to connect your Eclipse to your computer, please follow these steps (Figure 1):

1. Press in firmly and pull back on battery release to release battery.
2. Press in firmly and pull back on battery release and insert data cable assembly.
3. Connect power adaptor to data cable assembly.
4. Connect power adaptor to power outlet.
5. Connect USB to PC.
6. Turn on Eclipse by pressing power button.

Figure 1



Use and Operation

Power

Figure 2

To turn on your Bullard Eclipse Thermal Imager, depress the black power button located on top of the unit (Figure 2). Upon pressing the power button, you will hear an audible click, and the thermal imager will display the Bullard logo. A thermal image will appear within a few seconds. This image consists of black, white and gray elements indicating heat signatures of objects and scene dynamics. Warmer elements appear as lighter shades, while cooler elements appear as darker shades.

To turn off power, depress the power button.

Battery Status Indicator

A battery status indicator, located at the bottom center of the display, indicates the remaining battery charge for the Eclipse. A full charge is indicated by a full green bar in the battery indicator. During operation, the bar will deplete from left to right, changing to yellow when it reaches 40% charge, and then to red when it reaches 20% charge. At 10% remaining charge, the red bar will flash.

NOTE

You will periodically observe a momentary freeze in the image. This is normal and is a function of the self calibration shutter. The shutter will activate every 30 seconds to three minutes, depending on the environment.

Temperature Measurement Features

Your Eclipse may be equipped with optional temperature measurement features. If equipped with the Relative Heat Indicator (RHI), the display on the Eclipse will show a bar graph style temperature gauge. The RHI indicates the approximate temperature of the object viewed within the "crosshairs" shown in the middle of the display. The numeric temperature indicator, if equipped, functions in the same way but indicates the temperature as a numeric value. The accuracy of the indicators is dependent on numerous factors including the distance from the object being viewed and its emissivity, which is the object's ability to radiate heat. Units are calibrated with a preset emissivity corresponding with normal construction materials. Objects with emissivities that vary greatly from this, such as metals and shiny objects, will reduce the accuracy of the temperature indication. Additionally, temperature measurement accuracy decreases as the distance from the object in the "crosshairs" increases.

NOTE

The RHI and numeric temperature indicators provide a quick reference to compare objects of similar emissivities to serve as a guide to pinpoint intense heat sources. Due to the inherent issues with accuracy, use these features with caution and verify indicated heat levels through traditional means whenever possible.

High Heat Colorization Feature

Your Eclipse may be equipped with High Heat Colorization, a feature which colorizes heat levels in various color hues. Starting at 500 degrees, heated objects are tinted yellow and gradually transition to orange and then to solid red as heat levels rise. This feature identifies specific heat layers alerting firefighters to areas of intense heat providing an enhanced visual awareness of the hottest objects in a scene.

Electronic Thermal Throttle®

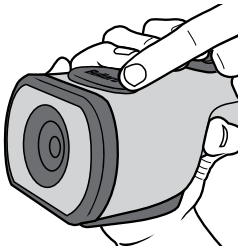


Figure 3

Your Eclipse may be equipped with Electronic Thermal Throttle (ETT), a highly useful and unique feature available on Bullard firefighting Thermal Imagers. The ETT is ideal for pinpointing hot spots during overhaul, searching for overheated electrical equipment, or clarifying objects in ambient temperature situations. To activate the ETT option, locate the rubber cover on the top of the Eclipse. Press the left side of the cover, which is the left button on the throttle, to activate the ETT (Figure 3). The ETT will automatically sense the hottest area in the scene and color it blue. Continuing to press the left button (or holding it down) will further engage ETT and will color more of the scene blue, eventually coloring even the coolest objects blue.

NOTE

As the throttle engages more of the scene, the blue will become lighter in hue to help differentiate objects in the scene.

As you cycle through the scene, you'll see the symbol "TT" and a corresponding number in the upper left hand corner of the display. The "TT" indicates "Thermal Throttle" mode. The number (0-100) is a point of reference to indicate the level of Thermal Throttle engagement; by itself it has no specific meaning. Most of the benefits of the ETT are accomplished with the first few presses of the button. To deactivate the ETT or lessen the amount of blue in the scene, press (or hold) the right side of the cover, which is the right button on the throttle. Alternatively, you can quickly deactivate the ETT, by pressing both buttons simultaneously for one second or turning off the Eclipse and turning it back on.

Loading/Unloading a Battery

To load a battery (Figure 4), depress and then slide the battery release switch in the direction of the arrow indicated on the button. With the battery release switch engaged, slide the battery into the groove in the cavity located at the bottom of the unit. You will hear an audible "click" when the battery is properly seated. To unload a battery, depress and then slide the battery release switch in the direction of the arrow indicated on the switch. With the battery release switch engaged, grip the battery by its exposed bottom section and pull it away from the unit (Figure 4).

Figure 4

NOTE

If the battery is inserted without first retracting the battery release switch, the battery will not fully seat. If this occurs, remove the battery and follow reload using the instructions above.

The battery latch mechanism prevents accidental battery release upon impact.

Charging and Maintaining Batteries

If you purchased an Eclipse Powerhouse with your Eclipse Thermal Imager, see the enclosed Powerhouse manual for charging instructions. If you purchased an Eclipse Thermal Imager only, you received a charging base.

Figure 5

To charge a battery in the charger included with your Eclipse, place it in the charging base (Figure 5). A steady red light will indicate that the battery is charging, while a steady green light will indicate a full charge. The system will detect the full charge and will not overcharge the battery. A completely drained battery takes up to three hours to fully recharge.

As with all batteries, your Bullard rechargeable battery will experience a slow drain of its charge during storage. The amount of drain varies widely based on storage conditions. To ensure adequate battery life, charge each of your batteries every two weeks or, for best performance, keep your Eclipse and spare battery charged in your vehicle in the Eclipse Powerhouse™ truck mount charger accessory (part number: ECLPOWERHOUSE). If you are using a Powerhouse charger, follow the instructions contained in the accompanying manual.

NOTE

Ensure that the charging base is receiving power from a source via either the AC or DC power adapters. If you do not see the red LED illuminate when you place a battery into the charger, the battery is not charging.

⚠ WARNING

Do not allow the metal contacts on the battery to come in contact with a conductive surface, such as a metal table or another battery. While the Eclipse is equipped with protective circuitry to prevent product damage, contact with conductive surfaces can complete the battery circuit and cause the battery to overheat or melt. Failure to observe this warning may result in permanent battery damage, property damage and/or serious injury.

NOTE

New, fully charged NiMH batteries will provide a run time of more than three hours. To extend the potential lifespan of your batteries, fully drain and recharge each battery monthly. For best operational results, develop a clear formalized plan for maintaining, charging, and replacing your batteries.

⚠ WARNING

The Eclipse Thermal Imager is extremely sensitive to intense, radiant heat sources. Never point the Eclipse at the sun or any other source of extreme radiant heat, as this could severely damage the thermal imager.

Retractable Strap

The Eclipse Thermal Imager fits easily into a turnout gear pocket for convenient storage while crawling or working. Additionally, Bullard offers a retractable strap that can be used with the Eclipse, so that it is always at the ready. The strap (part number: ECLRETRACT), purchased separately, can be mounted to a D-ring on your turnout gear coat and connected to the D-ring on the Eclipse.

Care Instructions

The Bullard Eclipse Thermal Imager requires little maintenance. For best results, after each use:

- Clean the outside of the unit with mild soap or detergent.
- Wipe the lens with a soft cloth.
- Clean the display with a soft cloth.
- Check screw tightness on cover display.
- Store your thermal imager in the optional truck mount or in the delivery case provided.
- All thermal imagers should be maintained using a proper program.

Cleaning the Lens

The Bullard Eclipse lens is recessed in an impact resistant bezel. The lens can be cleaned with a soft cloth and soapy water as required.

Replacing the Video Display Cover Window

The display cover (Figure 6) has a scratch-resistant hard coating to minimize marring. However, if heavy scratching or gouging does occur, the cover window can be replaced. To do this, remove the four Phillips head screws along the sides of the window. Remove the plastic display cover window and replace with a new one (part number:ECLWINDOW). Do not over-tighten.

Figure 6

CAUTION

Do not use solvents or paint thinners to clean your Bullard Eclipse Thermal Imager, as they could permanently mar the surface or degrade the protective properties of the casing.

Do not intentionally submerge the unit underwater or subject the unit to high-pressure water. Follow care instructions described above.

Failure to observe these instructions may result in product damage.
Any damage caused by improper care is not covered under warranty.

⚠ WARNING

Do not attempt to disassemble the Bullard Eclipse Thermal Imager. Disassembling the unit voids all warranties. For your convenience, TORX head screws have been used to mark all areas that are non user-serviceable.
Like all thermal imagers sold at the time of this printing, the Bullard Eclipse is not certified as intrinsically safe. Failure to follow these instructions could result in death, serious injury and/or product damage.
Thermal imaging is not a technology designed to replace current fire fighting tactics. Rather, it is a tool that allows the firefighter to be more effective and to make better decisions.
Firefighters should not stop using basic fire safety tactics. All firefighters should receive proper training on the following topics: how thermal imagers work; the uses and limitations of thermal imagers; image interpretation; and the safety considerations for thermal imaging use.

Service

If your Bullard Thermal Imager is not performing properly, consult the Eclipse Control Panel software and click on the Troubleshooting / FAQ tab. If the information in your troubleshooting session does not help remedy your issue, contact Bullard Customer Service at 877-BULLARD (285-5273). Outside the U.S. and Canada, call 1-859-234-6611. Describe the problem to the Bullard representative as completely as possible and provide the reference number from your Eclipse Control Panel troubleshooting session. For your convenience, your representative will try to help you diagnose or correct the problem over the phone. Before returning your Bullard Thermal Imager, you should verify with your representative that the product should be returned to Bullard. Bullard Customer Service will provide you with written permission and a return authorization number.

If the return is a non-warranty repair, a Bullard Customer Service Representative or your local distributor will provide you with a repair invoice estimate. To authorize repair, you must provide a purchase order to your distributor for the amount of the estimate. Once Bullard or a local distributor authorizes your repair, Bullard will issue you a return authorization number so that you can return the unit to Bullard. Bullard will repair the unit and ship it from our factory within 48 business hours. If the cost of repairs exceeds the stated quote by more than 15% or by more than $100, a Bullard representative will re-estimate your repair and Bullard or your local distributor will contact you for authorization to complete repairs. After repairs are completed and the goods have been returned to you, Bullard or your distributor will invoice you for the actual repair amount.

NOTE

Prior to returning your Bullard Thermal Imager, decontaminate and clean the thermal imager to remove any hazardous or contaminated materials that may have settled on the product during use. Laws and/or shipping regulations prohibit the shipment of hazardous or contaminated materials. Products suspected of contamination will be professionally decontaminated at the customer's expense.

Returned products will be inspected upon return to the Bullard facility. If the repair is under warranty, Bullard will repair the unit and ship it from our factory within 48 business hours.

Warranty

Bullard warrants to the original purchaser that the Bullard Eclipse and all features/accessories installed in the unit as well as battery charging units are free of defects in materials and workmanship under intended use and service for a period of one (1) year from date of activation. Bullard's obligation under this warranty is limited to repairing or replacing, at Bullard's option, articles that are returned within the warranty period and that, after examination, are shown to Bullard's satisfaction to be defective, subject to the following limitations:

a) Article must be returned to Bullard with shipping charges prepaid.

b) Article must not be altered from its original configuration.

c) Article must not have been misused, abused, or damaged in transport.

d) Maintenance and field replaceable items, if defective, are covered under warranty for a ninety (90) day period from the date of purchase. These items include:

- Batteries
- Straps
- Display covers
- AC/DC adapters

Bullard provides a limited lifetime warranty on the Eclipse outer shell. This warrants that the outer shell is free of defects in materials and workmanship under intended use and service for the original purchaser. Bullard's obligation under this warranty is limited to repairing or replacing, at Bullard's option, articles that after examination are shown to Bullard's satisfaction to be defective, subject to the following limitations:

1. Article must not be altered from its original configuration.
2. Article must not have been misused, abused, or damaged in transport.
3. When the outer shell is obsolete and Bullard no longer stocks the part, the limited lifetime warranty will be terminated.

In no event shall Bullard be responsible for damages, loss of use, or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that Bullard has been advised of the possibility of such damages.

Any implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to one (1) year from the date of manufacture of this.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Extended Warranty

The extended warranty has all the same terms and conditions as the one-year warranty, except it is for a period totaling two years (standard one-year warranty plus one additional year). This warranty can be purchased through any authorized Bullard distributor.

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